

2024 77th Annual Conference for Protective Relay Engineers (CFPR 2024)

**College Station, Texas, USA
25-28 March 2024**



**IEEE Catalog Number: CFP24557-POD
ISBN: 979-8-3503-6030-1**

**Copyright © 2024 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP24557-POD
ISBN (Print-On-Demand):	979-8-3503-6030-1
ISBN (Online):	979-8-3503-6029-5
ISSN:	2474-9753

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

20 Years of Reliable Service: Revisiting a Distribution Automation Scheme After 2 Decades.....	1
<i>Chris Stephens, Dustin McNeely, Greg Hataway, Bryant Grace, Brett Cockerham</i>	
A Case Study of Implementing a Stator Ground Protection Scheme at Long Spruce Generating Station.....	8
<i>Kris Manchur, Gilberto Maioli</i>	
Adaptive Protection for Meshed Secondary Networks Using Network Protectors	18
<i>Tapas Kumar Barik, Aadityaa Padmanabhan, Mobolaji Bello, Sean McGuinness, Resk Ebrahem Uosef, Frank Doherty, Deepak Khubani, Christopher Jones, John Foglio</i>	
Automated Solutions and Remote Settings Changes - AEP's Approach to Implementing PRC-027-1	26
<i>Jeff Iler, Nelson Doe, Manish Thakur</i>	
A Voltage Controlled Overcurrent-Based Adaptive Protection Scheme for Microgrids.....	36
<i>Aadityaa Padmanabhan, Tapas Kumar Barik, Sean McGuinness, Mobolaji Bello, Amin Zamani, Mehrdad Sheikholeslami</i>	
Bridging the Gap: Understanding User Input Options on Inverter Black Box Models	45
<i>Joseph Johnson, Sebastien Billaut</i>	
Cloud-Based End-To-End Testing of Protection Schemes	49
<i>Dhanabal Mani, Sai Chandra Reddy Thota, Abel Gonzalez</i>	
Digital Substation with Process Bus - A Comparative Review of IEC61850-9-2 and IEC 61869-9 Standards	60
<i>Alexandr Stinskiy, Evandro De Oliveira</i>	
Multiple Setting Groups Based Adaptive Protection for Radial Distribution Feeder	65
<i>Tapas Kumar Barik, Aadityaa Padmanabhan, Mobolaji Bello, Sean McGuinness, Pei Yuan Chan</i>	
Practical Approaches for Digital Twin Representation of Protection and Control Systems	71
<i>Yilin Zhao, Daniyal Qureshi, Suzana Arbana, Tim Chang, Mehrdad Chapariha, Jorge Velez</i>	
Protection of Distribution Grid with DER and IEEE1547.2-2023 Protection Guidance	78
<i>Jens Boemer, Sean Carr, Haile Gashaw, Janette Sandberg, Wayne Stec</i>	
Protection System Redundancy Criteria for NERC TPL-001.5 Footnote 13	87
<i>Davis Erwin, Scott Hayes</i>	
Slingshot Disconnection Understanding the Effect of Disconnecting an Un-Stabilized Ungrounded Source.....	113
<i>Sebastien Billaut, James Steele, Joseph Johnson, Stephen Miller, Koustubh Banerjee</i>	
Testing of Travelling Wave Fault Locators.....	120
<i>J. Blumschein, Bruno Alencar Arraes, Tiago Fernandes Barbosa</i>	
Transmission Line Protection Scheme Selection for HV Lines with IBRs: Utility Example.....	128
<i>Ram Viswanathan</i>	
Virtual Protection Relay: Myth or Reality?	133
<i>Jose Ruiz, Montie Smith</i>	

What's the Rush 2.0 141
Sebastien Billaut, Joseph Johnson, Jacob Quinn, James Steele

Author Index